

Spectrum of Clinical Complications, Observed During Diagnostic Upper GI-Endoscopy Procedure in Khyber Teaching Hospital Peshawar

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ABSTRACT

Objective: To evaluate the occurrence of different clinical complication in all patients during diagnostic upper gastrointestinal endoscopy procedure.

Study Design: Descriptive / cross sectional / single center study

Place and Duration of Study: This study was conducted at the Department of Medicine, Khyber Teaching Hospital, Peshawar from July 2017 to June 2018.

Materials and Methods: Total 500 patients, with mean age of 45±1 years, were enrolled in the study by non-probability consecutive sampling. From all these patients, who were advised diagnostic upper GI-endoscopy, informed consent was taken and all the demographic profile of the patients was recorded. Upper GI-endoscopy was performed and clinical adverse events like bleeding, perforation, aspiration, respiratory arrest, tachycardia, cardiac arrest, myocardial infarction and death were recorded. Data were analyzed using SPSS version 20 and graph pad prism version 6.0 while graph were constructed using Microsoft Excel 2013.

Results: Among 500 patients, 350 (70%) were male and 150 (30%) were female. Upper GI endoscopy was performed in all patients. Different clinical complications were observed in 25(5%) patients, while in 475(95%) patients, no major or minor clinical complications were observed. Out of 25 patients with observed clinical complications, 18 were male and 07 were female. No major complication like perforation, cardiac arrest, respiratory arrest and death was observed in any patients. Tachycardia, bleeding, aspiration and myocardial infarction was observed in 13, 09, 02 and 01 patients respectively. Increasing age and gender does not make any statistical significant difference of developing complications with p-value 1.0 though patient with age group of 46-55 and 56-65 are prone to develop complications as compared to other age groups (OR (95%CI 1.18 and 2.08) respectively.

Conclusion: These results clearly suggest, "That upper GI endoscopy is a very safe procedure in all indicated patients, if performed either directly or in the supervision of a senior and experienced endoscopist in a well prepared and properly investigated patients".

Key Words: Endoscopy, GI tract, complications and experienced endoscopist.

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INTRODUCTION

Upper GI endoscopy is a common procedure that is performed nowadays in different clinical settings including gastroenterology, general medicine and surgery¹. It is performed both in indoor patients and in all those patients who present to outdoor department on daily basis. Upper GI endoscopy is indicated for a number of diagnostic and therapeutic purposes².

The most common diagnostic indications for upper GI endoscopy are long standing dyspepsia, hematemesis, dysphagia, melena, and weight loss with dyspepsia, loss of appetite with dyspepsia, anemia with dyspepsia, endoscopic ultrasound and follow up cases of treated case with carcinoma of the esophagus, stomach and duodenum. The most common therapeutic indications are band ligations or sclerotherapy of bleeding esophageal varices, dilatation of esophageal sphincter or achalasia and removal of foreign bodies³.

Upper GI endoscopy can be considered a safe procedure, if performed by an experienced person in well-prepared patients. Most of the time, complications are usually seen in those cases where indication is weak, patient is not properly evaluated or prepared before the procedure and a non-experienced poorly skilled endoscopist performs the procedure. The minor complications usually observed during endoscopy like phobia, tachycardia, minor bleeding, slight aspiration

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and mucosal injury could occur commonly without any threat to life⁴. Major complication like respiratory arrest, cardiac arrest, myocardial infarction, perforation, major bleeding and death less common and are rarely seen⁵. These complications can also be observed in those patients who have major concomitant disease, non-cooperative and emotionally labile⁶. Because of this safety, it is now a day considered as one of the most commonly performed invasive procedure in Pakistan and around the world.

There are many studies at international level. In all these studies, no major complications were observed which is an encouraging sign regarding the safety of this procedure. In most of the studies published at international level, minor complication like phobia, tachycardia, minor bleeding and mucosal injury were reported. In spite of such a significant clinical complications related procedure, there is very limited research data available at national level, especially conducted in exclusively physician settings. To fill this gape, this study was conducted in the department of medicine, Khyber teaching hospital Peshawar KPK to document all the possible complications and present it in systematic manner.

MATERIALS AND METHODS

This descriptive- cross sectional study was conducted in the department of Medicine, KMC/KTH Peshawar, from July 2017 to June 2018. Total 500 patients, whom endoscopy was performed, were enrolled for this study. Patients were selected by non-probability consecutive sampling. The group age were 25 and plus years, comprising 70% males and 30% females patients. To avoid confounders, all patients with known bleeding disorders, known ischemic heart diseases and known major respiratory diseases were excluded from the study.

Data Collection: After getting proper informed consent, total 500 patients who were advised upper GI endoscopy in outdoor and indoor department of KTH Peshawar were enrolled in the study in a consecutive manner. A strict inclusion and exclusion criterion was applied. The study was approved by the ethical board of the hospital. Demographic information like name, gender and age were recorded and all information regarding patients were kept confidential. All the possible complications, observed in these patients were recorded separately.

Data Analysis: All the information were presented in frequency and percentages. Data were analyze using SPSS version 20. Chi-Square test was done to determine any possible association between age groups, gender and complications. Odds ratio (OR) with 95% confidence interval was determine to find risk using graph pad prism version 6.0. Graph was constructed using Microsoft Excel 2013.

RESULTS

In these 500 participants, there was 350 (70%) male and 150 (30%) female, having mean age of 45±1.26 years with minimum age of 25 years. Out of these 500 patients, n=50 (10%) patients were 25-35 years old, n=150 (30%) patients were 36-45 years old, n=150 (30%) patients were 46-55 years old, n=100 (20%) patients were 56-65 years and n=50 (10%) patients were above 65 years of age. All this is shown in shown in Table 1 and graphically shown in figure 1.

Endoscopy related complications were observed in 25 (5%) patients. Out of these 25 patients, major complication like perforation, cardiac arrest, respiratory arrest and death was not observed in any patients. Tachycardia, bleeding, aspiration and myocardial infarction were observed in 13, 09, 02 and 01 patients respectively as shown in table 2 and graphically shown in figure 2.

Table 3 shows associations of complications in endoscopy with different age group. In all 25 patients , 02 were in age group of 25-35 years range, 06 were in age group of 36-45 years range, 07 were in age group of 46-55 years range, 08 were in age group of 55-56 years range and 02 were in age group of >65 years range. Although we did not find any possible statistical association between different age groups and complications but the age group between 46-55 and 56-65 were prone to developed complications as compared to other groups with OR (95% CI) 1.18 and 2.08 respectively.

Chi-square test was also done to determine the pattern of complications based on gender, reveals no statistical significant association with p-value 1.0 (95% CI 0.4526-2.711).

Table No.1: Distribution of the patients on the basis of age

Age (years)	Frequency	Percentage (%)
25-35	50	10
36-45	150	30
46-55	150	30
56-65	100	20
> 65	50	10
Total	500	100

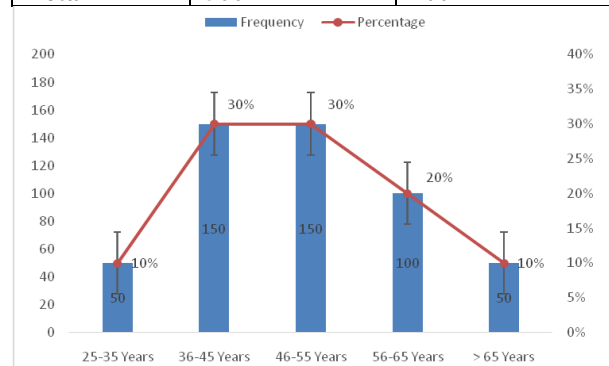


Figure No.1: Frequency of patients between different age groups

Table No. 2: Distribution of patients on the basis of complications

Type of complications	Numbers	Percentage
Bleeding	09	1.8%
Perforation	00	00%
Aspiration	02	0.4%
Cardiac Arrest	00	00%
Tachycardia	13	2.6%
Respiratory Arrest	00	00%
Myocardial infarction	01	.2%
Death	00	00%
No Complications	475	95%
Total	500	100%

Table No.3: Association of Endoscopy related complications in different Age groups

Age (Years)	Complications		p-value	95% CI	Odds Ratio
	Present	Absent			
23-35	02	48	Reference	-	-
36-45	06	143	1.0	0.1966-5.159	1.007
46-55	07	142	1.0	0.237-5.893	1.18
56-65	08	92	0.49	0.426-10.22	2.08
>65	02	48	1.0	0.1352-7.396	1.0
Total	25	475			

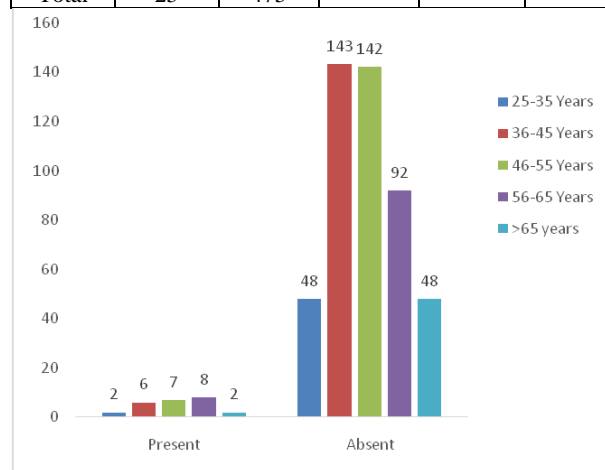


Figure No.2: Complications between age group

Table No.4: Endoscopy related complications based on gender

Complications	Male	Female	p-value	95% CI	Odds ratio
Present	18	07	1.0	0.4526-2.711	1.1
Absent	332	143			
Total	350	150			

DISCUSSION

Upper GI endoscopy is a common procedure that is performed on routine basis, both in indoors and out

door department. Gastroenterologist usually performs it, but a number of trained physicians and surgeon can perform it for clinical diagnosis. The prevalence of major complications related to upper GI endoscopy is very low that is 1 in 200 and mortality rate is even lower 1 in 2000⁷ and it can be considered as safe procedure for diagnosis rather than therapeutics in which minimal adverse events may occurs⁸.

Though there are many complications associated with GI endoscopy⁹. In our study, only minor complication like phobia, tachycardia, minor bleeding and mucosal injury were observed in a few patients and is considered non-significant. Similarly, major complication like respiratory arrest, cardiac arrest, myocardial infarction, perforation, major bleeding and death are rarely seen. These finding in our study regarding the major complications are close to the finding of two years audit conducted in 2012 by Bashiru Ismaila et al in Nigeria, where only two cases out 190 have developed major complication like respiratory arrest and esophageal tear¹⁰.

Our study supports that major complications which can be life threatening rarely occur during upper GI endoscopy. The frequency of minor complications is also not significant and can be easily managed with timely intervention and proper counseling on the tableside. Our study is consistent with a study conducted 3770 elderly patient (above 70 years) which finds no major complications even in elderly patients¹¹⁻¹³. Similarly, no major complications are reported in pregnant patients¹⁴ and/or patient taking antithrombotic medications¹⁵. This risk of complications in GI endoscopy greatly decreases if proper guidelines are followed¹⁶.

CONCLUSION

These finding show “that upper GI endoscopy is a safe procedure and the frequency of both major and minor complications is rare, if performed by experienced hands”. However, future study on a very large scale from different centers is recommended to get complete picture.

Author’s Contribution:

Concept & Design of Study: Jamaluddin
 Drafting: Nizamuddin
 Data Analysis: Bughdad Khan, Waheed Iqbal
 Revisiting Critically: Jamaluddin, Nizamuddin
 Final Approval of version: Jamaluddin

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

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